U.S. PATENT APPLICATION

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Invention:

METHOD AND SYSTEM FOR BROWSING AND ORDERING FROM CATALOGS VIA THE INTERNET

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SPECIFICATION

METHOD AND SYSTEM FOR BROWSING AND ORDERING FROM CATALOGS VIA THE INTERNET

FIELD OF THE INVENTION

The present invention relates to a method and system for
browsing and ordering from catalogs via the Internet.

BACKGROUND OF THE INVENTION

Historically, people have shopped from the comfort of their
homes (or offices) using printed paper catalogs. The traditional
printed catalog typically is a multi-page book containing an array of
product pictures and descriptions and detailed information for
purchasing such products.

A typical printed catalog page may include a title, which is the
category of products presented on the page, and one or more
presentations for products appearing within the category name.
Typically, each presentation includes a picture of the product, a
headline defining the benefits of the product, copy beneath the
headline describing various features of the product, including, for
example, size, color and weight, and detailed information and pricing
for ordering the product from the catalog company.

Also included in a typical printed catalog is an order form for purchasing selected products using the ordering information. The ordering information for desired products is placed on the order form, which is then mailed to the catalog company. Alternatively, a

5   purchaser can call what is typically a toll-free number to speak to a catalog company representative who takes the information for processing product purchases.

More recently, the Internet has become a vehicle for electronic commerce and a viable alternative for in home (or office) purchases

10   of products from companies that maintain a web site from which product information may be obtained and products ordered.

The Internet is a global communications system in which a vast number of computers and other devices are networked to allow user-to-user communications and transfers of data files from one machine

15   to any other on the network. The World Wide Web serves as one type of interface to the Internet that allows users to readily navigate the Internet's vast resources. The Web allows information and data dispersed across the Internet to be linked in an easily accessible way. This information or data typically includes text, graphics,

20   illustrations, sound and video.

The World Wide Web uses a client/server architecture in which client programs, called web browsers, running on users' computers

request data from server programs running on other computers known as servers, which are located elsewhere on the Internet. The data requested by a user's browser is typically part of a web site maintained by a company or other entity. When the browser program

5 requests the data, a web server hosting the web site sends the requested data back over the Internet to the browser, which then interprets and displays the data on the user's computer screen. Thus, a web browser is a computer program or application that has the ability to request data from any server on the Internet and interpret

10 and display on a user's computer the data sent by a server through the Internet. Conversely, a web server is a computer program that responds to web browser requests for data and sends the requested data to the web browser through the Internet.

A web page is typically a file that contains HTML (hypertext

15 mark-up language) files containing text and graphics, along with a set of HTML tags that describe how the text and graphics should be formatted and displayed on a user's computer screen. The tags are instructions that tell the web browser how the page should look when it displays the page on a user's computer. So, for example, the tags

20 serve to change the font size or color, arrange things in columns, etc. The graphics or images on web pages are typically either GIF files or JPG files. The GIF files are generally used for drawn graphics, while the JPG files are generally used for photographs or scanned images.

The World Wide Web uses an addressing system known as a
Uniform Resource Locator (URL). A URL consists of four parts that,
when combined, completely define the location of any file or service
located anywhere on the Internet. These parts are the protocol,

5   domain name, path, and filename. Thus, a user's browser, in
requesting a web page from a web site, sends a message over the
Internet that includes at least a transfer protocol (*e.g.*, http://), and a
domain name (*e.g.*, www.catalogcompanyname.com). The last two
components of a URL may or may not exist, depending on the

10   location and type of information any given hyperlink points to. The
server receives the user's request and retrieves the requested web
page or other file, which is composed in HTML. The server then
transmits the requested page or other file back across the Internet to
the user's computer. The user's browser program receives the HTML

15   file and displays its interpretation of the requested file. Thus,
browser programs send requests and receive the data needed to
display the HTML page on a user's screen. This includes the HTML
file itself, plus each of the graphic, sound and video files mentioned
in the HTML file. Once the data is retrieved, the browser formats the

20   data as indicated by the HTML tags and displays it on the user's
computer screen.

Web pages are typically hypertext documents, *i.e.,* documents
which provide clearly visible links to other documents or web pages
on the World Wide Web. When a user clicks on a hypertext link, or

hyperlink, a new request to retrieve another file is sent over the Internet. With a web browser, a user typically sees formatted documents that contain text, graphics and highlighted hyperlinks. The browsers let a user navigate the Internet, not by entering

5   commands, but rather by moving a mouse pointer to a desired hyperlink and clicking. The browser establishes contact with the related server in a remote computer, and the server transfers the requested file to the user's machine, displaying it in the user's browser as another formatted, hyperlink document. Thus, a user can

10   "surf" the web by hopping from hyperlink to hyperlink without delving deeply into the contents of any particular document.

Users connect to the Internet typically via a modem dial-up connection to an Internet Service Provider, although some connect via a direct line such as a T1 or a T3 line. Most modem dial-up

15   connections occur over regular phone lines. These analog lines have limited bandwidth, which limits the rate of speed at which data can be transferred from the Internet to a user's computer. Common transfer rates for modems used with analog phone lines are 28.8 and 56 Kbps. With a rate of data transfer of 28.8 Kbps, the download of a typical

20   window screen consisting of 50 KBytes of data can take as much as 13 seconds, while a 1 MegaByte image file at the same data transfer speed could take as much as 5 minutes. Thus, where you have a user who is looking to download catalog web pages containing multiple

graphical images per page, a significant amount of time can be spent by the user waiting for the download of each page.

It is possible to reduce download time by subscribing to an improved connection service, such as ISDN (Integrated Services

5   Digital Network) or DSL (Digital Subscriber Line). While such services allow for faster download times, they are not available in many locations, such as the rural locations where persons who traditionally use catalogs to shop live. Moreover, there is an additional expense to a user of these services, which may not be

10   affordable or justified, given the purpose for which a user's computer and Internet connection may be used. This may be particularly the case where a user operates his or her computer and Internet connection for personal purposes only.

SUMMARY OF THE INVENTION

15   The present invention is a method and system for browsing and ordering from catalogs via the Internet which overcomes the download limitations associated with performing these tasks using a typical modem dial-up connection to the Internet. According to the present invention, an Internet user/catalog customer seeking to

20   browse a catalog, is first provided with a low resolution image file of a requested catalog page that provides the customer with a collection of low resolution images for identifying the products presented on the

catalog page. Nominally, this low resolution file would be 20-30 K bytes in size, it having been generated using a reduction computation based on a reduction ratio of nominally 2MB to 20KB. Each time the customer requests a new catalog page, a low resolution image of the

5   requested page is displayed on the customer's computer by the customer's browser program. The size of the computer file corresponding to each of the low resolution image pages is reduced to be as small as possible, while still allowing sufficient detail to allow a customer to recognize generally the category name, headline and the

10   products imaged on the page. By initially providing such low resolution images of the requested catalog pages, the pages can be quickly downloaded to a customer's computer, thereby allowing the customer to quickly browse selected catalog "pages." While product catalogs are typically directed to physical items offered for sale by a

15   catalog company, the present invention also contemplates a broader definition of "products" that may include, for example, services or non-tangible items that may be offered by a company as its products.

When a customer sees a product in which he or she is interested, the customer can request more detailed information about

20   the particular product by clicking on a hyperlink that connects the customer to another file containing such detailed information. The hyperlink, which is embedded in the low resolution image catalog page, may be a blocked area which, in effect, corresponds to the entire presentation of the product pictured on the page. When a

customer clicks anywhere in this "live" blocked area corresponding

to a particular product, a more detailed presentation for that product

is provided. This more detailed presentation may be built from

several files which include a higher resolution image (*i.e.,* larger file

5   size) of the product, a headline file identifying the product, a copy

file describing the product, and an order block data file providing

detailed information for ordering the product. The more detailed

presentation is then transmitted by the catalog web page server to the

customer over the Internet, after which the customer's browser

10   receives the detailed presentation file and displays it in the

customer's computer according to the format contained in the more

detailed file. If the customer decides to buy the product, another

hyperlink in the detailed presentation is then clicked to obtain another

file in which information for ordering the product is stored. If the

15   customer chooses to not buy the product, then he or she has the

option of returning to the low resolution image catalog page

previously being viewed, after which the detailed presentation for

another product pictured on that low resolution image catalog page

can be requested by clicking on the blocked area link for that product.

20   Alternatively, the customer can request a different catalog page,

whereupon a low resolution image of the requested page is then

transmitted by the catalog web page server to the customer's browser

program for viewing by the customer.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a block diagram of a system for carrying out the catalog browsing and ordering method of the present invention;

FIGURE 2 is a flow diagram of the catalog browsing and
5   ordering method of the present invention;

FIGURE 3 is a sample of a web page for a product catalog company;

FIGURE 4 is another page linked to the web page of FIGURE 3 through which a customer requests a desired product catalog and
10   particular pages of the product catalog;

FIGURE 5 is a sample of a low resolution image catalog page requested using the requesting page of FIGURE 4;

FIGURE 6 is a detailed presentation of a selected one of the products shown on the low resolution image catalog page of FIGURE
15   5;

FIGURE 7 is a second detailed presentation of another product shown on the low resolution image of the catalog page of FIGURE 5;

FIGURE 8 is a low resolution image of a "specials" page of the web page catalog also accessed through a link on the web page of FIGURE 3; and

FIGURE 9 is a detailed presentation of one of the products shown on the low resolution image "specials" page of FIGURE 8.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGURE 1 is a block diagram illustrating a system for carrying out the catalog browsing and ordering method of the present invention. Shown in FIGURE 1 is a server computer system 10 connected to the Internet 11. Stored in the memory (not shown) of computer 10 is a web server program 12 and a plurality of files 14 relating to a product catalog web page 13. Constituting the plurality of files 14 are a first series of files 15, which are low resolution images of the catalog pages comprising the product catalog, a second, larger series of files 16 which are detailed presentations of the products shown on the low resolution image catalog pages 15, and a third series of files 17 displayed to customers as "access pages" to implement the displaying of catalog pages and the ordering of products pictured on such pages.

Also shown in FIGURE 1 are several client systems 18, each of which can be, for example, a television with Internet access, but

which is preferably a personal computer with a modem 22 for
connecting to the Internet 11. Stored in each computer 18's memory
(not shown) is a browser program 20 for requesting information from
web servers, such as server 12. The client systems 18 are each
5   typically operated by a customer desiring to browse, and perhaps
order products from, a catalog web page.

Although not specifically shown in Figure 1, computers 10 and
18 would typically include central processing units (CPUs) and
system buses that would couple various computer components to the
10 CPUs. These system buses may be any of several types of bus
structures, including a memory bus or memory controller, a
peripheral bus, and a local bus using any of a variety of bus
architectures. The memory used by computers 10 and 18 would also
typically include random access memory (RAM) and one or more
15 hard disk drives that read from, and write to, (typically fixed)
magnetic hard disks. A basic input/output system (BIOS), containing
the basic routines that help to transfer information between elements
within a personal computer system, such as during start-up, may also
be stored in read only memory (ROM). Computers 10 and 18 might
20 also include other types of drives for accessing other computer-
readable media, such as a removable "floppy" disks, or an optical
disk, such as a CD ROM. The hard disk, floppy disk, and optical
disk drives are typically connected to a system bus by a hard disk
drive interface, a floppy disk drive interface, and an optical drive

interface, respectively. The drives and their associated computer-readable media provide nonvolatile storage of computer-readable instructions, data structures, program modules, and other data used by machines, such as computers 10 and 18. Computer 10 will also

5   include a communications device (not shown) for connecting to Internet 11. Such communications device and modems 22 may be internal or external, and are typically connected to the computer's system bus via a serial port interface. Computers 10 and 18 may also include other typical peripheral devices, such as printers, displays and

10   keyboards. Typically, computer 18 would include a display monitor (not shown) on which various catalog pages and other catalog information are displayed.

FIGURE 2 is a flow diagram for the catalog browsing and ordering method of the present invention. The first step 31 is

15   generating the computer files 15 containing for each catalog page a low resolution scan image from a corresponding detailed catalog page 32. In the present invention, each such low resolution image catalog page is a computer file nominally 20-30K bytes in size. An example of such a low resolution image catalog page 33 is shown in

20   FIGURE 5 of the application.

The next step 34 in the method of the present invention is to create for each low resolution image catalog page an image map for each product pictured in the low resolution image catalog page.

These image maps use an X-Y coordinate system to define the outline of areas corresponding to the product pictures. Clicking with a mouse within an area, such as area 35 shown in Figure 5, causes server 13 to return a detailed product presentation page hyperlinked

5 to such area.

A low resolution image is generated for each page of the catalog to be accessed at the product catalog web site. Once the low resolution images of the various catalog pages are generated, the next step 36 shown in FIGURE 2 is to load the area outlined low

10 resolution pages 15 into Computer 10's memory so that they can be accessed by web server 12.

When a customer links to a product catalog web page, such as that shown in FIGURE 3, he or she is presented with a display 60, that includes a number of hyperlinks 62 that allow the customer to

15 further link to various files associated with browsing the catalog's pages and with ordering products from the catalog. Clicking on the "browse print catalog" link 64 causes the user to link to a new page 70 shown in FIGURE 4 for requesting a particular catalog and then particular pages from the selected catalog. Page 70 shown in

20 FIGURE 4 includes a plurality of links 71 for selecting a particular catalog and a page selection field 72 for selecting a desired page number of a selected catalog 74. After the "Select A Page" field 72 is clicked, a drop menu (not shown) appears from which the customer

can choose a desired page by a second click on a page number, which links the user to the catalog page corresponding to the page number clicked in field 72 shown in FIGURE 4. Clicking on a desired catalog and then on a page number in field 72 corresponds to the step

5   37 in FIGURE 2 of requesting a particular catalog page.

At step 38 of FIGURE 2, web server 12 sends to a customer's computer 18 the low resolution image of the requested catalog page, such as catalog page "29" (web page 33) shown in FIGURE 5, after which the customer's web browser 20 displays web page 33 on

10   customer's computer 18.

At step 39 of FIGURE 2, the customer clicks in an outlined area for a given product, such as, by way of example, area 35 shown in FIGURE 5. Clicking on outlined area 35 links the user to another web page 40 shown in FIGURE 6 that is a detailed presentation of

15   the product shown in area 35 of FIGURE 5. This detailed presentation of such product is dynamically created at step 41 of FIGURE 2. The web server 12 presents one of the pages 16 which is a detailed presentation of the product shown in the low resolution image of the web page 33 shown in FIGURE 5.

20   Referring simultaneously to FIGURES 2 and 6, the detailed presentation 40A shown in FIGURE 6 typically includes a high resolution photograph 42A, a headline 43A, product copy 44A and an

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order block 45A for purchasing the product pictured and described in FIGURE 6. The high resolution photograph 42A is generated from a JPG file 42 accessed by web server 12. The headline 43A, copy 44A and order block 45A are all dynamically generated from headline file

5   43, copy file 44 and order block data file 45, respectively, also accessed by web server 12. At step 46 of FIGURE 2, the presentation of FIGURE 6 is sent through the Internet to browser 20, where it is displayed on the customer's system 18. After the detailed presentation 40A is displayed on the customer system 18, at step 47

10   of FIGURE 2, the customer makes a buy decision as to whether to purchase the product presented on his or her system 18.

If the customer chooses to buy the product, he or she clicks a buy button 48A shown in FIGURE 6, whereupon at step 49 of the flowchart of FIGURE 2, the order is processed. If the customer

15   chooses to not purchase the product, he or she simply clicks the back button on the web browser to return to the previously displayed low resolution image catalog page.

Referring again to FIGURE 5, if a customer decides to purchase a different product 50 shown in the low resolution image

20   catalog page"29" (web page 33), then he or she clicks in the outline area 50 for such product to obtain a detailed product presentation for that particular product. The new detailed presentation 40B shown in FIGURE 7 is then accessed when link 50 in low resolution image

web page 33 is clicked. Here again, the detailed presentation 40B shown in FIGURE 7 includes a high resolution photograph 42B of the product, a headline 43B, product copy 44B and an order data block 45B. If the customer wishes to order the product shown in

5 FIGURE 7, he or she again clicks the buy button 48B to initiate the purchase.

Also included in the web page 70 (Fig. 4) for selecting particular catalog pages by page number, is a search link 73 which links the user to a field (not shown) in which can be typed a product

10 name or product description keyword for purposes of locating the catalog page, or pages, on which such product is displayed and described. Once the product name or keyword is entered in the field, a "Go" button (not shown) is clicked, which then links the customer to the low resolution image catalog page on which the product is

15 displayed and described. With the right product name or keyword, the customer would again be linked to the web page showing, for example, the low resolution image web page 33 (catalog page 29) of FIGURE 5. If the customer then wanted additional information about any of the products shown in catalog page 29, he or she would again

20 click an outline area, such as, for example, areas 35 or 50, to retrieve one or the other of the detailed product presentation 40A or 40B shown in FIGURES 6 and 7, respectively.

Referring again to the web page 60 shown in FIGURE 3, other hyperlinks can be included on page 60 to initiate other browsing and/or buying functions. For example, web page 60 can include a "specials" link 66 which, when clicked, links the customer to yet

5   another web page 80 containing a low resolution image of a catalog page containing various products on special sale. An example of a "specials" catalog page is shown in FIGURE 8 of the application. In the example shown in FIGURE 8, the specials page 80 includes several product pictures 82 and a corresponding number of headlines

10   84 identifying the products pictured on page 80. In this case, also included are subheadlines 86 which identify the date until which each of the products is on sale. If a customer wishes to obtain further information about a particular special product, he or she clicks on an outline area 88 or a word link 89 corresponding to the desired

15   product. Clicking on outline area 88 or word link 89 links the customer to a detailed presentation web page 90 for the product depicted in the outline area 88. The detailed presentation web page 90 is shown in FIGURE 9. Here again, the detailed presentation 90 includes a high resolution photograph 42C, a headline 43C, product

20   copy 44C and an order block 45C, which in this case includes two entries. If a customer decides to order one or more of the specials products, he or she clicks one or more buy buttons 46C corresponding to such products.

Referring again to the web page shown in FIGURE 3, other hyperlinks that can be included on the web page 60 are pictures 68 depicting different types of products. The picture links allow a user to go to different types of products in which he or she may be interested. Web page 60 can also include a "checkout" hyperlink 67 which initiates a final purchase of the selected products.

Although the present invention has been described in terms of a particular embodiment, it is not intended that the invention be limited to that embodiment. Modifications of the disclosed embodiment within the spirit of the invention will be apparent to those skilled in the art. For example, the web page can include additional hyperlinks to initiate additional functions associated with the browsing of the product catalog and the purchasing of products within the catalog. It can also include other hyperlinks for other functions such as new products, upcoming events, news, customer rights, security and privacy, forms, gift registries, and the establishment of a personal catalog which includes products previously purchased by a customer or products in which the customer has an interest but which he or she may not have yet purchased. The scope of the present invention is defined by the claims that follow.

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